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10/034,160	12/26/2001	Thomas James Edsall	ANDIP001/425518	9388

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EXAMINER	
PHAM, BRENDA H	
ART UNIT	**PAPER NUMBER**
2416	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/034,160	EDSALL ET AL.	
	Examiner	Art Unit	
	BRENDA PHAM	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-23,25-28,30-50,52,53,55,56,58-61 and 63-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *-2,4-7,9-23,25-28,30-50,52-53,55-56,58-61,63-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/3/08;9/15/08;5/02/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-2, 4-7, 9-23, 25-28, 30-50, 52-53, 55-56, 58-61, 63-66 are pending in the application.

Allowable Subject Matter

2. The indicated allowability of claims 1-2, 4-7, 9-23, 25-28, 30-50, 52-53, 55-56, 58-61, 63-66 is withdrawn in view of the newly discovered reference(s) to Callon et al (US 6,643,287 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 4-5, 7, 11-13, 14, 22-23, 25-26, 28, 32-33, 35, 44-47, 49-50, 53, 55-56, 58, 60, 63, 65-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over WAKAYAMA et al (US 2001/0049739 A1) in view of ISHIZAKI (US 2003/0101239 A1) further in view of FRANTZ et al (US 5,959,990) and furthermore in view of Callon et al (US 6,643,287 B1).

Regarding claims 1, 2, 9-10, 22-23, 30-31, 34, 44-46, 48, 50, 55, 56, 59-61, 65-66, WAKAYAMA et al discloses a network device and method for use in a network, the method comprising:

receiving or generating a packet or frame compatible with a standard protocol employed in the area network;

encapsulating the packet or frame with a virtual area network identifier, a type of traffic to be carried by the packet or frame, and information specifying at least one of a TTL value or MPLS information, wherein encapsulating comprises appending a header to the packet or frame to create a new packet or frame, wherein the header includes fields for the virtual area network identifier and information specifying at least one of the TTL value or the MPLS information; and sending the encapsulated packet or frame (see FIG. 1-5, [0048] thru [0059]).

Although WAKAYAMA et al does not teach VLAN can be used as VSAN, it is well known in the art that a “Storage Area Network” or SAN means any network, real or virtual, that has one of it primary functions to provide storage from one or more storage system to one or more computer system,(as is defined by TAMURA et al, US 6,728,848).

ISHIZAKI, also teaches a storage device with VLAN support. Ishizaki teaches a secure IP protocol capable storage devices using Virtual Local Area Network (VLAN) technique (see abstract and figure 2).

Therefore, it would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the method of WAKAYAMA et al in a virtual storage area network, such as that in ISHIZAKI.

Although WAKAYAMA does not teach wherein the header further includes a field specifying the type of traffic to be carried by the packet or frame, wherein the type of traffic include at least one of Ethernet, fibre channel or Infiniband, it is well known in the art to inserting a frame type such as Ethernet type field (of an Ethernet data frame) in the header. Frantz et al, in the same field also teaches the header includes a field specifying the type of traffic include Ethernet type (see FIG. 5B). It would have been obvious to those having ordinary skill in the art at the time of the invention was made to indicate the type of traffic include in the frame, such as taught by Frantz et al, in WAKAYAMA.

WAKAYAMA further fails to teach the packet including a first header and wherein encapsulating comprises appending a second header to the packet or frame to create a new packet. This limitation is well known in the art and also teaches by Callon et al. **(see FIG. 4 and 6).**

Callon et al teaches “An apparatus and method for encapsulating and forwarding packets on a network" Abstract. Callon et al further teaches "In accordance with the invention, the packet being transferred is encapsulated such that it can forwarded over the second subnetwork, e.g., the public Internet, by adding the second header portion, e.g., an IP header, to the packet. Because the value included in the second header portion is derived from the first header portion, any specific source/destination pair

within the first subnetwork, i.e., the virtual private network, will result in a unique header for the second header portion. Therefore, in accordance with the invention, the encapsulating second header portion can be used to uniquely select one of a pluralit of possible paths on the second subnetwork for transfer of the packet. In one embodiment, a logical operation such as a hash operation is performed on the second header portion. The result of the hash operation is then used to select one of the plurality of paths. In this way, traffic from the first subnetwork, e.g., the VPN, can be distributed over the plurality of paths. At the same time, packets within a flow, i.e., packets associated with a single source/destination pair, always take the same path such that misordering of packets is eliminated.

For the above reason, it would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the teaching or Callon, in WAKAYAMA, for forwarding encapsulated data packets on a network having multiple links between nodes.

Regarding claims 4, 5, 7, 25, 26, 28, 53, 58, 63, WAKAYAMA et al teaches wherein the TTL value specifies a number of remaining hops that can be traversed before the encapsulated packet or frame is dropped.

Claims 11 and 32, WAKAYAMA et al further teach wherein the header comprises a field specifying a use priority for the packet or frame ([0024] and FIG. 2, element 514-1).

Claims 12-14, 33, 35, 47, 49, as explained in the rejection statement of claim 1 (parent claim). WAKAYAMA et al discloses all the claim limitations in parent claim. Although WAKAYAMA et al in view of ISHIZAKI do not teach wherein the standard protocol is fibre channel or Infiniband, it is well known in the art to utilize Fibre Channel or Infiniband standard protocol in MPSL switching network.

5. Claims 6, 16-20, 27, 37-42, 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over WAKAYAMA et al (US 2001/0049739 A1) in view of ISHIZAKI (US 2003/0101239 A1) further in view of Frantz et al (US 5,959,990) and in view of Callon et al (US 6,643,287 B1) and furthermore in view of BEHZADI (US 6,728,220 B2).

Regarding claims 6, 27, 52, WAKAYAMA et al in view of ISHIZAKI further in view of FRANTZ et al and Callon et al does not disclose calculating an error check value for the new packet or frame and including the error check value the new packet or frame, insert CRC value field in MPLS header is well known and is slow in FIG. 6 of BEHZADI. It is well known in the art a process used to check the integrity of a block of data. A CRC character is generated at the transmission end. Its value depends on the hexadecimal value of the number of ones in the data block. The receiving end makes a similar calculation and compares its results with the added character. If there is a different, the recipient requests retransmission. CRC is a common method of establishing that data was correctly received in the data communications.

Therefore, it would have been obvious to one having ordinary skill in the art to implement packet header including CRC field.

Claim 16, 37, BEHZADI further teaches wherein the header includes a TTL field and the field has 8 bits reserved (see Col. 2, lines 35-39).

Claims 17-20, and 38-42, BEHZADI further teaches wherein the new packet or frame includes one or more MPLS labels, each of the labels including an indicator to indicate whether the label is the last label in a label stack; wherein the indicator field is one bit. (As shows in FIG. 2, the MPLS label field carries the label value that is used to forward a packet to the next LSR. The stacking field is used to identifying when an MPLS header is the last MPSL header in the stack of MPLS header, and the TTL field carries a TTL value that places a limit on the number of an MPLS packet can traverse within an MPLS domain.)

6. Claims 15, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over WAKAYAMA et al (US 2001/0049739 A1) in view of ISHIZAKI (US 2003/0101239) and further in view of Callon et al (US 6,643,287 B1) and further in view of ROSEN (US 6,337,861 B1) and furthermore in view of WALRAND et al (US 6,674,760 B1).

Regarding claims 15 and 36, WAKAYAMA et al in view of ISHIZAKI and Collon discloses a method as set forth in claim 1 (parent claim), WAKAYAMA et al and TAMURA et al and Collon et al does not teach wherein the header field for the virtual storage area network identifier has 12 bits reserved.

WALRAND et al, in the same field of endeavor, teaches the VSAN tag includes a 12-bit VSAN-ID used to identifying the VSAN to which the packet is directed (see [0005]).

It would have been obvious to implement a 12-bit VSAN-ID in the packet header.

7. Claims 21, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over WAKAYAMA et al (US 2001/0049739 A1) in view of ISHIZAKI (US 2003/0101239 A1) and further in view of Callon et al (US 6,643,287 B1) and further in view of ROSEN (US 6,337,861 B1) and furthermore in view of AGGARWAL et al (US 6,330,614).

Regarding claims 21, 43, WAKAYAMA et al in view of ISHIZAKI and Collon et al disclose all the claim limitation recites in clam 1 (parent claim). WAKAYAMA et al in view of ISHIZAKI and Collon et al does not teach wherein the header further includes a version field indicating a version of the header. The limitation is well known in the art and is teach by AGGARWAL et al in according to figure 7.

It would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the version field indicating a version of the header, such as that teach by AGGARWAL et al.

8. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.

Ellis et al (US 6,920,153 B2) disclose a technique for enabling a shared storage provider (SSP) to provide shared data storage to a plurality of customers.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (571) 272-3135. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

November 17, 2008

/Brenda Pham/

Primary Examiner, Art Unit 2416